

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently amended) A method for providing service with guaranteed Quality of Service (QoS) in IP access networks, each of the IP access networks comprises an edge router connected to a backbone network, and an access network end device connected to subscribers, comprising:

a1. a calling subscriber sending a request, to a service entity, for a service with guaranteed QoS;

a. the service entity at network service control layer judging service rights of the calling subscriber after receiving the request, obtaining a calling subscriber address and a called subscriber address, and determining QoS requirement for the service, then sending a resource request to an edge router to request resources;

b. the edge router corresponding to the calling subscriber and a called subscriber computing bandwidth between a access network end device and the edge router after receiving the resource request and determining whether there are enough resources for this service according to topology structure of the IP access network and bandwidth resources of each interface of the IP access network, if there are enough resources, the edge router notifying the service entity that there are enough resources; and the edge router receiving confirmation information from the service entity, executing c., otherwise rejecting the service request of the calling subscriber; and

c. if there is an upward traffic stream sent from one of the calling subscriber and the called subscriber to the corresponding IP access network for this service, the corresponding edge router informing the corresponding access network end device of the QoS requirement for the service, and the corresponding access network end device setting items of a stream classification table according to parameters for identifying the upward traffic stream contained in the QoS requirement; classifying the upward traffic stream sent from one of the calling subscriber and the called subscriber; and performing bandwidth limitation according to bandwidth parameters in the QoS requirement informed by the corresponding edge router for the upward traffic stream when matched with the items of the stream classification table, and processing the upward traffic stream when not matched as an upward traffic stream without guaranteed QoS;

If there is a downward traffic stream to be sent to one of the calling subscriber and the called subscriber from the corresponding IP access network for this service, the corresponding edge router setting priority in the corresponding IP access network for this service and forwarding the downward traffic stream to the corresponding subscriber according to the priority set by the corresponding edge router.

2. (Previously Presented) The method according to claim 1, wherein in step c, the edge router can transform service level into priority in the IP access network for the downward traffic stream and forward the downward traffic stream to the corresponding subscriber; or can classify the downward traffic stream first, after identifying the downward traffic streams, transform the identified downward traffic stream into priority in the IP access network and forward the downward traffic stream.

3. (Canceled)

4. (Previously Presented) The method according to claim 1, further comprising a step of the edge router obtaining at least the topology structure of the IP access network and the bandwidth resources of each interface of the IP access network through static configuration or dynamic management protocol.

5. (Canceled).

6. (Previously Presented) The method according to claim 1, wherein the step c comprises:

setting the downward traffic stream with a high priority and then forwarding the downward traffic stream when the access network end device is an Ethernet or IP Digital Subscriber Line Access Multiplexer (DSLAM); and

sending the downward traffic stream to Permanent Virtual Circuit (PVC) with guaranteed QoS for further forwarding when the access network end device is an ATM DSLAM.

7. (Previously Presented) The method according to claim 1, wherein parameters for identifying the upward traffic stream can be a four-element group, a five-element group or a seven-element group.

8. (Previously Presented) The method according to claim 1, further comprising: before receiving the QoS requirement from the edge router of the IP access network for the upward traffic stream, the access network end device processing the upward traffic stream sent from one of the calling subscriber and the called subscriber as an upward traffic stream without guaranteed QoS.

9. (Previously Presented) The method according to claim 2, wherein for LAN access, L2 or L3 switch between the edge router and the access network end device of the corresponding IP access network forward the downward traffic stream according to the priority of the downward traffic stream.

10. (Previously Presented) The method according to claim 1, further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command to the access network end device, and the access network end device deleting corresponding items of the stream classification table according to the QoS release command.

11. (Previously Presented) The method according to claim 6, further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command to the access network end device, and the access network end device deleting corresponding items of the stream classification table according to the QoS release command.

12. (Previously Presented) The method according to claim 7, further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command to the access network end device, and the access network end device deleting corresponding items of the stream classification table according to the QoS release command.

13. (Previously Presented) The method according to claim 1, wherein managing bandwidth according to bandwidth parameters comprises: performing bandwidth limitation, by the access network end device, for the upward traffic stream matched with the items of the stream classification table according to the bandwidth parameters.

14. (Canceled).

15. (Previously Presented) The method according to claim 1, further comprising:

the service entity sending QoS requirement including bandwidth, directions of traffic streams and parameters for identifying the traffic streams to the edge routers; and wherein

the edge routers corresponding to the calling subscriber and the called subscriber computes the bandwidth between the access network end device and the edge routers comprises:

the edge routers computing the bandwidth between the access network end device and the edge routers according to the QoS requirement sent from the service entity.